UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/734,834	12/11/2000	· Jacek Szyszko	10559-369001 / P10175	4725

20985   7590   07/12/2006

FISH & RICHARDSON, PC
P.O. BOX 1022
MINNEAPOLIS, MN 55440-1022

EXAMINER
TRAN, ELLEN C

ART UNIT	PAPER NUMBER
2134	

DATE MAILED: 07/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/734,834	SZYSZKO, JACEK
	Examiner	Art Unit	
	Ellen C. Tran	2134	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *17 April 2006*.

2a) ☒ This action is **FINAL.**   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-30* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☐ All b) ☐ Some * c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. _____.

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

1.   This action is responsive to communication: filed on 17 April 2006 with original

application filed 11 December 2000.

2.   Claims 1-30 are currently pending in this application. Claims 1, 9, 14, 20, 25, 27, and 29

are independent claims.

Response to Arguments

3.   Applicant's arguments filed 17 April 2006 have been fully considered but they are not

persuasive.

In response to applicant's argument on page 2, *"Applicant submits that the differences*

between the subject matter of claim 1 and the Li patent are more substantial than merely

utilizing sequence numbers when transmitting messages. Claim 1 recites a particular method

that involves the use of authentication keys and sequence numbers when sending messages".

The Office disagrees with argument, Li does not specifically state sequence numbers but Li does

indicate col. 3, lines 64-67 "In one embodiment of the present invention, security domains are

defined in accordance with routing domains defined by any one of a number of well known

routing protocols such as OSPF etc.". Any of these known routing protocol use sequence

numbers when sending messages. Furthermore Li indicates in col. 11, line 52 through col. 12,

line 16 that the lifetime of the message may be zero or less than the zero, which is interpreted to

be an obvious variation of "sequence number".

In response to applicant's argument beginning on page 2, "The particular method recited

in claim 1 includes sending a first message (e.g., KEY 2, SEQ+2 in FIG. 4) containing a first

sequence identifier (e.g., SEQ+2) and a digest of routing information that has been calculated

using a first authentication key (e.g., KEY2); ... Although the OSPF reference generally

discloses the use of sequence umbers with respect to link state advertisements

("LSA")(see§12.1.6), the OSPF) reference does not disclose the particular method of using

sequence number that is recited in claim 1". The Office disagrees with arguments and reminds

applicant that the references should be looked at in combination Li, teaches the sending of digest

of routing information and first and second authentication keys, the combination of Li and OSPF

is because Li does not explicitly state "sequence identifier", however as explained above lifetime

as well as the reference to the use of known protocols such as OSPF is cited in Li.

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or
> described as set forth in section 102 of this title, if the differences between the subject matter
> sought to be patented and the prior art are such that the subject matter as a whole would have
> been obvious at the time the invention was made to a person having ordinary skill in the art to
> which said subject matter pertains. Patentability shall not be negatived by the manner in which
> the invention was made.

5.   **Claims 1-30** are rejected under 35 U.S.C. 103(a) as being unpatentable over Li

U.S. Patent No. 6,606,706 (hereinafter '706) in further view of OSPF version 2, RFC 2328,

published 1998 (hereinafter OSPF).

As to independent claim 1, "A method of transmitting routing information

comprising: sending a first message" is taught in '706 col. 3, lines 64-67;

"and a digest of routing information" is shown in '706 col. 10, lines 6-13;

"**that has been calculated using a first authentication key**" is disclosed in '706 col. 11,

lines 27-33;

"**and subsequently sending a second message**" and "**that is earlier in a sequence than**

the first sequence identifier and a digest of the routing information that has been calculated

using a second authentication key" is taught in '706 col. 11, lines 52-67;

"**wherein the second sequence identifier is sequentially related to the first sequence**

identifier" is disclosed in '706 col. 12, lines 8-16 (Note the second message is interpreted to be

have the same meaning as 'multicast announcement').

the following is not taught in '706 "**containing a first sequence identifier**" and "**containing a**

second sequence identifier" however OSPF teaches in 12.1.6. "LS sequence number

The sequence number field is a signed 32-bit integer. It is used to detect old and duplicate

LSAs" on page 120 (Note The receiver then need only check this sequence number to determine

whether or not the received packed is a retransmission. The sequence number is used in Li when

the security broker keeps transmitting the request until it receives replies from all security

domain border routers col. 12, lines 8-16.)

It would have been obvious to one of ordinary skill in the art at the time of the invention

to modify the teachings of '706 a security system with border routers to utilize sequence

numbers when transmitting messages. One in the art would have been motivated to perform

such a modification when using routing protocols such as OSPF (see '706 col. 3, lines 64-67)

"In one embodiment of the present invention, security domains are defined in accordance with

routing domains defined by any one of a number of well known routing protocols such as

OSPF".

As to dependent claim 2, **"wherein each authentication key has a specified lifetime**

and the lifetime of the second key expires prior to the lifetime of the first key" is disclosed in

'706 col. 11, lines 49-64.

As to dependent claim 3, **"wherein the first key is valid only following an**

authentication key rollover and the second key was valid at a time prior to the

authentication key rollover" is taught in '706 col. 11 lines 49-64.

As to dependent claim 4, **"determining whether neighboring routers have**

successfully performed the authentication key rollover and sending both the first and

second messages only if it is determined that at least one neighboring router has not yet

successfully performed the authentication key rollover" is shown in '706 col. 12, lines 7-16.

As to dependent claim 5, **"including sending only the first message if the first**

message forms part of a routing information advertisement that is the first such

advertisement transmitted by the router after the authentication key rollover" is disclosed

in '706 col. 12, lines 7-16.

As to dependent claim 6, **"including sending only the first message if it is determined**

that all neighboring routers have successfully performed the authentication key rollover" is

taught in '706 col. 12, lines 26-28.

As to dependent claim 7, **"including: receiving the first and second messages in a**

particular neighboring router; and processing, in the particular neighboring router, only

the digest contained in the first message" is shown in '706 col. 10, lines 53 through col. 11, line 27.

As to dependent claim 8, "wherein the first sequence identifier comprises a number greater than the second sequence number" is disclosed in '706 col. 13, lines 25-57.

As to independent claim 9, this claim is directed to a router of the method of claim 1 and is rejected along the same rationale.

As to dependent claims 10, 11, 12, and 13, these claims are substantially similar to dependent claims 6, 3, 5, 8; therefore they are rejected along the same rationale.

As to independent claim 14, "A computer system comprising: a plurality of computer networks; a first router interconnecting at least some of the computer networks; and neighboring routers coupled to the first router wherein the first router is configured for periodically sending respective first and second messages to one or more of the neighboring routers" is taught in '706

col. 3, lines 64-67 (Note the OSPF protocol designates that LSA messages are sent periodically to update routing information);

"and for sending the first message prior to the second message" and "a digest of routing information that has been calculated using a first authentication key" is disclosed in '706 col. 11, lines 27-33;

"wherein the first message contains a first sequence identifier" and "and wherein the second message contains a second sequence identifier" is shown in OSPF page 120;

"that is earlier in a sequence than the first sequence identifier and a digest of the

routing information that has been calculated using a second authentication key" is taught in

'706 col. 11, lines 52-67.

As to dependent claims 15, 16, 17, 18, and 19; these claims are substantially similar to

dependent claims 4, 5, 6, 7, and 8; therefore they are rejected along the same rationale.

As to independent claim 20, this claim is directed to a computer-readable medium of the

method of claim 1 and is rejected along the same rationale.

As to dependent claims 21-24; these claims are substantially similar to dependent claims

2-8; therefore they are rejected along the same rationale.

As to independent claim 25, "A method for use in connection with a router

comprising: receiving in the router a first message" is taught in '706 col. 3, lines 64-67;

"and a digest of routing information" is shown in '706 col. 10, lines 6-13;

"that has been calculated using a first authentication key" is disclosed in '706 col. 11,

lines 27-33;

"containing a first sequence identifier" and "subsequently receiving in the router a

second message containing a second sequence identifier" is taught in OSPF on page 120;

"that is earlier in a sequence than the first sequence identifier and a digest of the

routing information that has been calculated using a second authentication key" is taught

in '706 col. 11, lines 52-67;

"and processing the first message using the first authentication key and discarding

the second message without processing routing information contained therein if the router

has successfully performed an authentication key rollover from the second key to the first

key" is shown in '706 col. 11, lines 21-25 and '706 col. 12, lines 7-16;

"wherein the second sequence identifier is sequentially related to the first sequence

identifier" is disclosed in '706 col. 12, lines 8-16.

As to dependent claim 26, "including processing the second message using the

second key only if the router has not successfully performed the authentication key

rollover" is disclosed in ''706 col. 12, lines 8-16.

As to independent claim 27, this claim is directed to a router of the method of claim 25

and is rejected along the same rationale.

As to dependent claims 28, this claim is substantially similar to dependent claim 26 and

is rejected along the same rationale.

As to independent claim 29, this claim is directed to a computer-readable medium of the

method of claim 25 and is rejected along the same rationale.

As to dependent claims 30, this claim is substantially similar to dependent claim 26 and is

rejected along the same rationale.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as

set forth in 37 CFR 1.136(a). A shortened statutory period for reply to this final action is set to

expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed

within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened

statutory period will expire on the date the advisory action is mailed, and any extension fee

pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In

no event, however, will the statutory period for reply expire later than SIX MONTHS from the

mailing date of this final action.

6.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Ellen C Tran whose telephone number is

(571) 272-3842. The examiner can normally be reached from 8:00 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Jacques H. Louis-Jacques can be reached on (571) 272-6962. The fax phone number

for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ellen Tran
Patent Examiner
Technology Center 2134
26 June 2006